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TODAY

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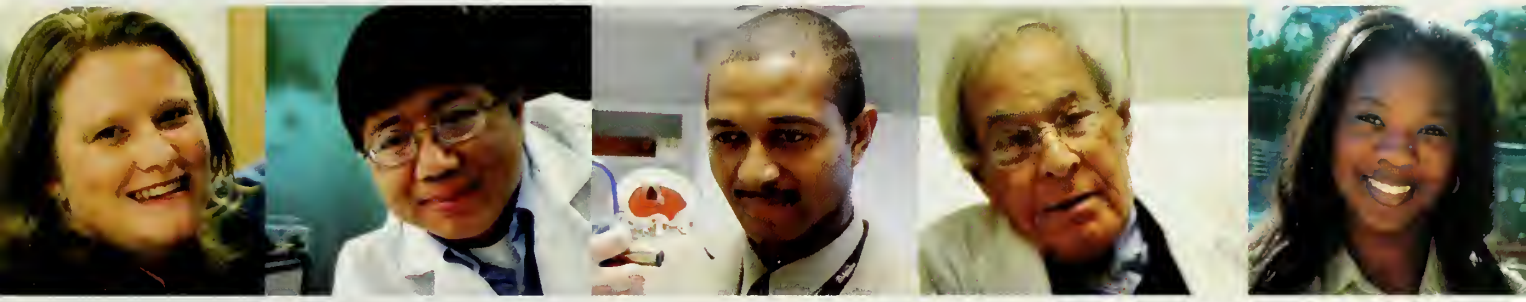

Dear Readers,

The winter 2003 edition of *Medical College of Georgia Today* provided an overview of the astonishing work taking place in the MCG Center for Biotechnology and Genomic Medicine. In this edition, we zoom in on one particular aspect of the center's work: dissecting the genetic, environmental and immunological factors that combine to create type 1 diabetes. The better we understand this devastating disease, we better we can treat it…with the ultimate goal being a cure.

We also invite you in this edition of the magazine to meet Chris and Angie Moon, parents guided by their deceased child's spirit to honor her short life…and to do everything in their power to help other sick children.

Also featured in this edition of *MCG Today* is an intimate glimpse into the life of an alumnus who died decades ago, but whose legacy benefits the life of every Georgian to this day. Dr. Lamaratine Griffin Hardman combined his medical expertise, business acumen and commitment to public service to make life better for the Georgians he served and for those of future generations. We think you'll be fascinated by his life story—the latest in a series of history articles we offer in recognition of MCG's 175th anniversary.

And won't you join in our celebration by attending Homecoming 2003? The fun, food and friendships—both new and renewed—of this annual event, scheduled this year for April 24-27, can't be beat. Look for more information about Homecoming in this edition of *MCG Today.* I hope to see you there.

Sincerely,

Daniel W. Rahn, M.D.
President, Medical College of Georgia

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On the Cover: Dr. Lamartine Hardman (far left) performs surgery in Hardman Sanatorium with brother W. B. Hardman (center) in the early 1900s.

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AT A GLANCE

The Top Rung

Reiterating his support for $8.6 million in government funding for the Medical College of Georgia Cancer Research Center, Georgia Gov. Sonny Perdue visited campus Jan. 22 to become better acquainted with the state's health sciences university.

Gov. Perdue and his wife, Mary, toured the Children's Medical Center Neonatal Intensive Care Unit, then held a brief press conference in the CMC lobby. "To see the miraculous work being done in the NICU and to hear [MCG President Dan] Rahn's vision of not only what is being done, but what can be done, is simply thrilling," Gov. Perdue said. "It's remarkable to see the progress that has been made."

In another show of support for MCG's cancer initiative, the Robert W. Woodruff Foundation, Inc., has awarded the university a $2 million grant to support construction of the cancer building.

During Gov. Perdue's visit, President Rahn said the governor's vast and varied background—

including a career as a veterinarian before becoming a public servant—offers unique insight into the state's health care needs. "All his experiences have helped him map a bold vision for the state of Georgia," President Rahn said.

Laughing that he had to pry his wife away from the babies in the NICU, Gov. Perdue said his support of MCG comes from the heart. "The essence of service is to be able to see the joy of a parent or grandparent knowing a life has been saved," he said. "You can't put those feelings into dollars and cents."

He lauded not only MCG's clinical care, but its cutting-edge research that promises future advances in health care. "I see MCG as a conduit for synergy in Georgia, to do great things not only for the citizens in Georgia but for the nation and the world," he said.

Gov. Perdue said he is anxious to step up support not only of MCG's cancer efforts but of other research endeavors that will propel the state to national prominence. "I'll work with President Rahn," he said, "to make sure we get to the rung where we want to be: that's the top."

Gov. Sonny Perdue at MCG Children's Medical Center

Step Up to the Plate

Members of the Medical College of Georgia community who are Georgia residents are invited to apply for a 2004 Georgia license plate commemorating the university.

"This is an excellent way to demonstrate your support of MCG and your pride in being a member of the MCG community," said R. Bryan Ginn Jr., MCG vice president for external affairs and government relations. "We welcome the participation of MCG faculty, staff, alumni, students and others who support the university."

Those interested must submit an application and a $25 manufacturing fee to their county tag agent by July 31. The application (form MV-9C) is available on the Department of Motor Vehicle Safety's Web site, www.dmvs.ga.gov.

Five-hundred applications must be received in order for the commemorative license plate to be manufactured. If the required number of applications is received and the manufacturing fee paid, the license plate will be manufactured and issued during the owner's registration period in 2004 upon the payment of a $20 tag fee, $25 special tag fee and ad valorem taxes. If the required number of applications is received and an owner has not paid the $25 manufacturing fee, the license plate will be manufactured and issued during the owner's registration period in 2004 upon payment of the manufacturing fee, the $20 tag fee, the $25 special tag fee and ad valorem taxes.

If the required number of applications is not received, the commemorative license plate will not be manufactured and the manufacturing fee will be refunded.

For more information, contact your county tag office or Mr. Ginn's office, (706) 721-4413.

Vessel of Life

Retired Georgia Rep. Jack Connell has received the Medical College of Georgia President's Vessel of Life Award.

The award honors personal integrity and contributions to society that enhance MCG's missions of education, service and patient care. It was presented during MCG's annual President's Club Dinner last fall honoring the university's most generous supporters. Established in 1975 by the MCG Foundation, Inc., the club recognizes donors of $1,000 or more during the past year or lifetime gifts of $10,000 or more.

MCG President's Vessel of Life Award recipient Jack Connell

MCG President Daniel W. Rahn cited Rep. Connell's leadership, community service and support of MCG in presenting the award. "While I could highlight many of Rep. Connell's great achievements, I would suggest that his vision in helping create the Georgia Radiation Therapy Center in 1970 is at the top of the list," President Rahn said. "Today, this center serves as a significant building block as MCG assumes its leadership role in Georgia's effort to fight cancer."

Rep. Connell's efforts help ensure MCG's role as "a top academic medical university through continued advancements in technology, facility improvements, campus and academic programs," President Rahn said.

Rep. Connell began his political career in 1969 as a member of the Augusta City Council. In 1969, he was elected to the Georgia House of Representatives. He served as majority whip and was elected speaker pro tem in 1977. He held this office for 25 consecutive years, making him the longest-running speaker pro tem in the history of Georgia and the United States. Rep. Connell chaired the Augusta-Richmond County Legislative Delegation.

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Editor's note: Dr. Kelley graduated from the MCG School of Dentistry in May 2001 and is completing an orthodontics residency at MCG. This essay, reprinted with permission from the *Journal of the American College of Dentists,* placed first in the Student Ethics Competition sponsored by the Georgia Section of the American College of Dentists.

What Patients Need...and Why

By Dr. James Kelley

Having recently graduated from dental school, I now realize what practicing dentists have known for years: Dentistry goes with you wherever you go.

Upon hearing that I am a dentist, people almost instinctively point to a tooth and begin telling of their dental experiences. So I was not surprised when a friend shared her latest dental concern with me. Apparently, her 7-year-old cousin was told that she would need a frenectomy to allow space closure between her central incisors. The child's parents were balking at the idea of putting their child through what they perceived as an unnecessary and traumatic surgery. Couldn't the space be closed with braces?

In another instance, a dental student related how he had to drive two hours home to look in his mom's mouth and confirm what her dentist told her: She needed a new bridge after wearing a hole through the connector of the one she'd had for 37 years.

What stood out in my mind about these stories was the patients' perceived lack of need for their treatments. Where is the breakdown that causes patients to question their dentists' judgment? Is it simply a lack of communication, or lack of trust?

In dental school, I often heard patients ask, "So why are we doing this?" or "What exactly are we doing today?" only moments before a procedure. As dentists, we may take many things for granted, such as the understanding that the 7-year-old patient's diastema will not remain closed following orthodontic treatment without surgery to reposition the frenum. In this case, my friend asked me to e-mail her cousin's parents and briefly explain the procedure and its need. Upon doing so, they gladly had the procedure done. In this case, as in many, the dentist could have saved a great deal of confusion while also building patient confidence by simply taking the time to be sure that the patient understood the importance of the service provided.

As dentists, we are charged with the responsibility of being professionals the moment we are accepted into dental school. It is our ethical and professional obligation to fully explain patients' treatment needs: what they need and why they need it. Only when the treatment options are fully explained can the patient make an informed decision.

Many dentists may counter that they frankly do not have the time to sit with patients and discuss treatment concerns. With today's overhead often running at least 60 percent, dentists argue that we can ill afford to spend the invaluable minutes discussing treatment options. However, spending a few extra minutes with patients to help build their trust will only pay off in the long run.

Clearly, there is a thin line between giving a patient too much and not enough information to make a competent decision regarding treatment. Some dentists may feel that patients should simply trust our judgment. The problem is that dentistry is in competition with Circuit City and Best Buy: We are competing for a patient's disposable income. For the most part, our services do not involve life-or-death situations. Dentists, therefore, must spend the extra time to make clear to patients their need for treatment.

Dentists and dental organizations have worked very hard to promote public awareness of dentistry and the issues the profession faces. With this continued work and dentists' concerted efforts to help our patients understand not only what they may need but why they need it, dentistry will certainly have a very bright future.

Medical College of Georgia Today welcomes submissions to the *Reflections* segment of the magazine. Typed essays (approximately 750 words long) reflecting a professional or personal concern of a member of the MCG community should be submitted to: Christine Hurley Deriso, Editor; *Medical College of Georgia Today;* FI-1040; Medical College of Georgia; Augusta, GA 30912; (706) 721-2124 (phone); (706) 721-6723 (fax); cderiso@mail.mcg.edu (e-mail).

Mending a Dysfunctional Relationship

By Toni Baker

He dissects a three-way relationship that can go very badly.

The relationship is between genes, the immune system and the environment. In just the wrong combination, the consequence of this relationship can be a lifetime of disease. "Type 1 diabetes is a devastating, lifelong disease," said Dr. Jin-Xiong She, director of the Medical College of Georgia Center for Biotechnology and Genomic Medicine. In the last 20 years, there has been a near-explosion in the incidence of the disease in which the body's immune system attacks the insulin-producing beta cells of the pancreas.

The youngest child Dr. She has seen with type 1 diabetes was 6 months old; the whys of the increasing and increasingly young target population remain a mystery.

"Sometimes when the environment becomes too clean, it can promote autoimmune disease such as type 1 diabetes," he said. "Whether it's the disappearance of some infectious agents or the appearance of new infectious agents or some dietary factor, we really don't know. But something has changed in the environment over the last 20 years or so that has increased the incidence of type 1 diabetes." Today, .4 percent of all babies born will develop the disease.

"Common diseases such as type 1 diabetes, hypertension, cancer—they all have a genetic basis but are not caused by any single gene," said the geneticist and Georgia Research Alliance Eminent Scholar in Genomic Medicine. "They are caused by a combination of a large number of genes as well as the environment. And in the case of autoimmune disease, such as type 1diabetes, the immune system also comes into play. I'm interested in finding out how these three systems interact and how we can modify this system to prevent autoimmune disease."

The primary genes involved in type 1 diabetes, HLA-DR and HLA-DQ, are key regulators of the immune system, essential to fighting infection. But some of the hundreds of forms of these genes also have a role in many autoimmune diseases. "Depending on which form a person has, that person may be predisposed to certain diseases," Dr. She said. "What protects you from type 1 diabetes would be a good gene, right? But it may predispose you to rheumatoid arthritis. So the genes themselves are not bad. It's the combination of genes and the particular environment."

Environment, literally, is as big as all outdoors and beyond. Nearly everything measurable matters, including baby formula, infections, vaccinations, air conditioning and proximity to power and chemical plants.

But to calculate disease risk, the activity of the immune system must be figured in. A key factor is the presence of autoantibodies, early indicators of the immune system reacting to body tissue. When these autoantibodies and certain genes are present, there is about a 90 percent chance that a child will develop type 1 diabetes.

Over the last five years, Dr. She—then director of research for the University of Florida Diabetes Center and the university's Diabetes & Digestive & Kidney Diseases Biotechnology Center--and his team helped compile a prospective study of more than 10,000 primarily Florida newborns. The study was designed to identify high-risk babies and follow them until they develop diabetes or reach age 20. They identify the children at high risk by looking at their genes in a tiny drop of blood taken from the standard heel prick at birth.

"We monitor everything you can imagine," said Dr. She, who brought about 20 colleagues with him when he came to MCG in July. "The environment is very broad. It includes infectious agents; even cow's milk is a suspected trigger for diabetes." There is conflicting scientific evidence on the many suspects, and Dr. She aims to clear up any confusion. "We don't really know for sure what the true triggers are. Since we don't know, we call them environmental because they can be anything other than our genetic architecture. This is part of what we have been looking at and we think we have a better approach to investigate this question."

He brought that better approach with him to MCG and soon will enroll 5,000 to 8,000 Georgia newborns annually in his PANDA (Prospective Assessment in Newborns for Diabetes Autoimmunity) study.

Enrollment of Georgia's newborns began at MCG Hospital last December with plans to rapidly expand that effort. Dr. Andrew B.S. Muir, chief of pediatric endocrinology who came to MCG last summer from the University of Florida where he worked with the newborn screening program, is critical to the new screening program in Georgia as well. Dr. She and his colleagues also will continue to follow the high-risk children in Florida.

Researchers at the MCG Center for Biotechnology and Genomic Medicine will

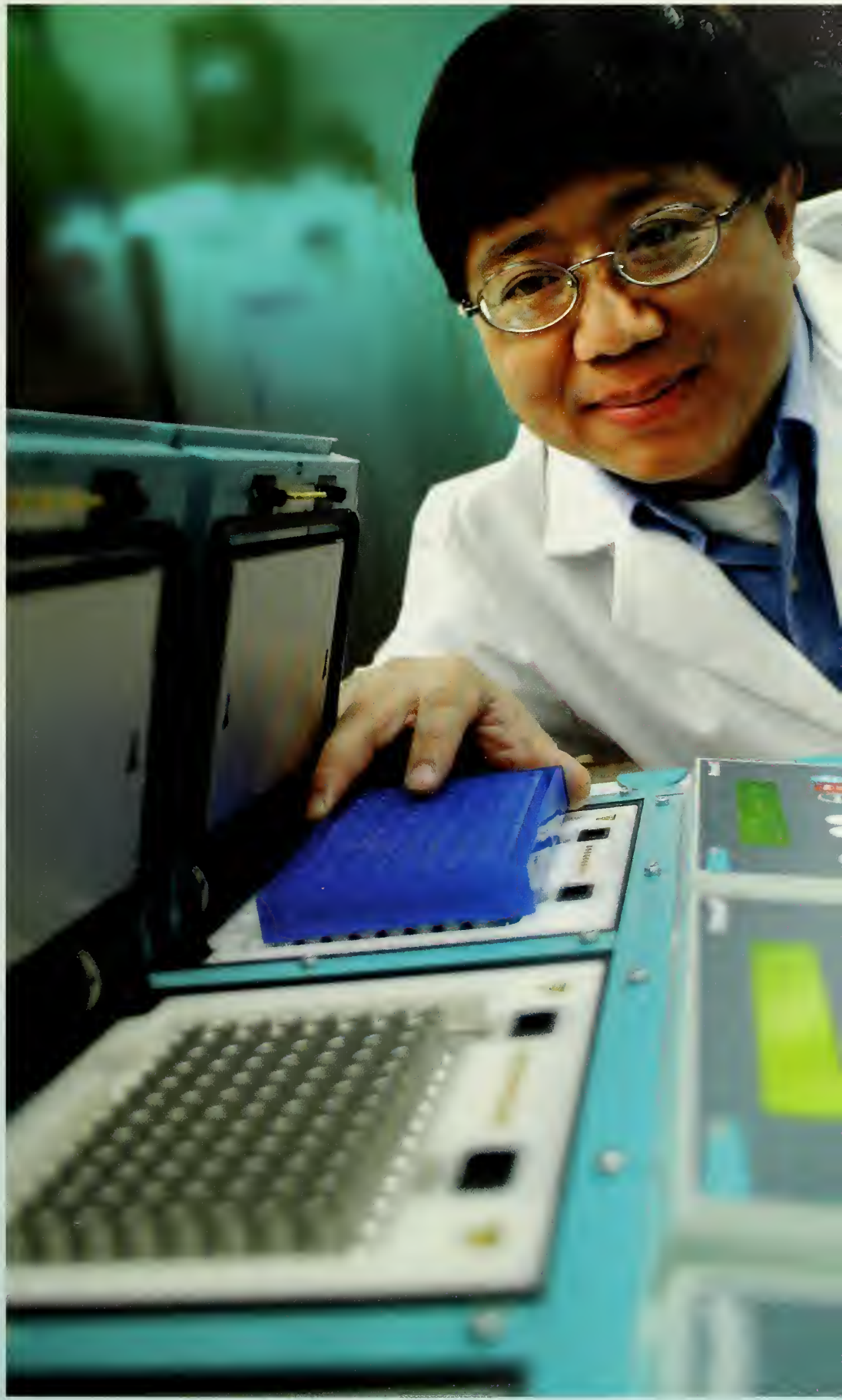
study children with type 2 diabetes as well, a different disease process but with the same potentially devastating results, including cardiovascular disease and vision loss.

In recent years, type 2 has moved from near exclusivity as an adult disease to one that affects an increasing number of children. Although researchers know less about the genetics of this disease, they have clear evidence that rising rates of obesity and related inactivity are major environmental factors.

"The outcome of the two diseases is almost identical but the way you get the disease is completely different," he said. "Both diseases involve disregulation of blood glucose, but how it gets there is very different. In type 1, the insulin-producing cells in the pancreas are destroyed. In type 2, the production of insulin may or may not be decreased. Sometimes it's even higher. But the response to insulin is abnormal. Genetics are a huge factor in type 2, probably even higher than in type 1," he said, but, unfortunately, very little is known about the genetics except that this disease is probably even more complex.

"We have a lot to do," said Dr. She.

The center reflects the mindset that complex disease requires study by diverse specialists with access to technologies and data systems needed to make the results meaningful. Support from groups such as the National Institutes of Health and the Georgia Research Alliance are transforming the idea into reality.



Dr. Jin-Xiong She

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Life as it ought to be.

Functional genomics, proteomics, bioinformatics and stem cell biology are focuses of the developing center. "Functional genomics means we will use high-throughput technology to study gene expression...because every disease process or normal function can be traced to the expression of genes," Dr. She said. "Essentially, we want to know whether the messenger RNA of the genes is present or absent and, if it's present, what are the levels," he said of the laboratory process that measures gene expression and activity. They use technology called microarray analysis to look at the gene activity level of high-risk babies. "We are the only laboratory that can do that; we pioneered the use of microarray technology for diabetes prediction," he said of the test that is still in the research and development stages.

Proteomics, which analyzes proteins, the ultimate expression of genes, is another massive undertaking of the center. "It's the next step after the mapping of the human genome," Dr. She said. "The genome era is basically sequencing and mapping of human genes. That is pretty much done. Now we have to figure out what the genes do: how they perform normal function, what diseases they cause if they are abnormal and how you can correct either the genes or the proteins to prevent or cure disease."

His aim is wide on this project, not limited to genes or proteins tied to any disease, but rather exploring the total contents of a cell and trying to determine what each of the some 30,000 known genes do. Dr. She will utilize the Amersham core proteomics laboratory, established at MCG by the Georgia Research Alliance in spring 2001, for his studies. He also plans to further develop the technology.

A third focus is the logical need to collect, manage and analyze the extensive data produced by the center's endeavors. "You have to have a way to figure out what the information means. You have to extract whether the information is relevant to what you are studying. That means high-performance computers and investigators with computer and technical expertise."

Dr. Richard A. McIndoe, the center's associate director who came with Dr. She from the University of Florida, will spearhead the bioinformatics initiative. The scientists intend to utilize bioinformatics and computer experts at the Georgia Institute of Technology and the University of Georgia to optimize this part of the center.

To complete the circle of finding and analyzing how things work and how sometimes they don't, the scientists will explore how flexible stem cells differentiate with the goal of repairing disease-causing abnormalities.

"We want to combine the stem cell biology with the programs in genomics, proteomics and bioinformatics so we can develop a full package, from the basic information of how our normal system functions to the correction or cure of human disease," said Dr. She, a 40-year-old man with a lot on his plate and a smile on his face.

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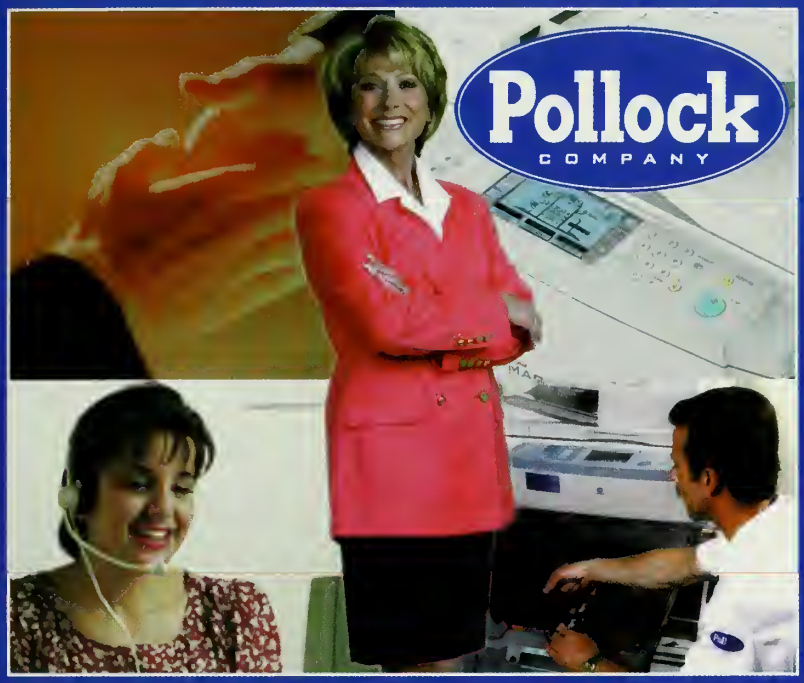

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Becca's Legacy

By Christine Hurley Deriso

Angie Moon was almost preternaturally brave throughout most of her daughter's illness. But shortly after Becca was diagnosed with cancer, Angie found herself crying while she and her little girl watched television together. Angie tried to be discreet, but Becca noticed her mother's tears. "Why are you crying, Mommy?" she asked. "Are you upset because I'm going to see God?"

Angie weeps at the memory. "I've always believed God can talk to children," she says. "Maybe Becca knew something I didn't."

Throughout their daughter's illness, Chris and Angie couldn't bring themselves to think the worst. "All you can do is hope for the best," said Chris.

So when their daughter's persistent stomachache was diagnosed at the Medical College of Georgia Children's Medical Center in 1999 as neuroblastoma, they clung to the statistic that 50 percent of children with the disease survive.

Of *course* Becca would be among that 50 percent. To think otherwise was unimaginable.

But blond, sunny Becca seemed to calmly intuit her destiny. "She took care of us more than we took care of her," says Angie. "She was always telling us everything was going to be OK."

Indeed, the final year of Becca's short life seemed touchingly goal-oriented for a 5-year-old. She had business to take care of...and somehow, she knew it. "She always did so many sweet things for so many people," Angie says. "She called my dad one day and said, 'Come pick me up. We need to have granddaughter-papa time.'"

Medical science rallied to save Becca. In November 1999, she became MCG's first pediatric stem cell transplant recipient. The procedure, though daunting because of the necessity to temporarily shut off the body's immune system, was a success. By January, Becca was back in preschool, giggling with her friends and clicking her heels during tap dance lessons. "We got our life back," Angie says. "Suddenly, everything was normal again."

Becca even squeezed in a trip that June to Los Angeles, where the Make a Wish Foundation enabled her to meet idols Mary-Kate and Ashley Olsen. She hung out on the set while the twin actresses shot a movie.

But only days after that dream vacation, Becca complained of knee pain. Certainly such a common symptom would prove to be harmless...right?

The crushing answer was no. The cancer was back and had spread to several areas of Becca's embattled body.

Even at this point, the Moons clung to hope. "You talk to the doctors and try to find a new game plan," Chris says.

Becca was admitted to the CMC, where her indomitable spirit seemed destined to help her overcome any odds. Shortly after her admission, she spent the day in the CMC playroom baking Easy Bake Oven cookies with her best friend. (A treat for her health care providers, she explained.) But she went to bed that night and never woke up again. That Sunday, with her loving parents, grandparents, great-grandparents, aunts and uncles by her side, Becca died.

"It still astonishes me how fast it happened," Angie says. "Just two days before, she was baking cookies..."

During Becca's funeral, Angie released helium-filled balloons with a note attached telling her daughter's story. Through tear-filled eyes, she watched as they soared skyward, headed—like her daughter—to a destination that she could only imagine. But amazingly, she learned days later that the balloons had landed in safe and loving hands. A woman named Rebecca Love found the balloons and the note near her house some hundred miles from the Moons' Augusta-area home. Ms. Love contacted the family immediately. Becca's balloons, she told them, had completed their journey.

Three years after Becca's death, Chris and Angie's reminiscences of their daughter are sprinkled, often simultaneously, with tears and laughter. "I smile more than I cry," Angie says. She even finds comfort in her dreams, despite the fact that they feature a happy and vibrant child who isn't there when she wakes up. "Most of the time," Angie says softly, "it's nice to dream."

For Becca's sake, they are committed to moving forward, and to honoring their daughter's memory in the process.

In October 2000, they established the Rebecca Erryn Moon Foundation, a non-profit organization that provides "bags of love" to newly diagnosed CMC cancer patients. The bags include toys and other comforting items for the children, plus small gifts for their parents including a gift certificate to a local restaurant.

The foundation also meets other needs as they arise; for instance, one family received assistance paying a utility bill during their child's illness. Another child received a chair lift to transport her up and down the stairs of her home.

The foundation's chief source of income is an annual golf tournament, this year scheduled for May 4 at Gordon Lakes in Fort Gordon, Ga. "I was in the golf course business for 10 years, so this is a way to use that experience to benefit children," Chris says.

"It's wonderful to know the tragedy in our life has brought so much good to others," Angie adds.

And Becca's legacy will soon touch even more lives. After her death, Chris and Angie sold their house and moved in with family to pursue a dream that Becca inspired. Chris left the golf business and Angie quit her job at the MCG Child Care Center to enroll in the MCG Department of Radiologic Sciences.

"She changed our lives so dramatically," Angie says. "When she came into our lives, we weren't very goal-oriented. Now, we have such a strong sense of purpose. I'll never forget the patience and compassion of Becca's ultrasound technician. I want to be able to give that back to other patients."

Chris and Angie's dedication and commitment haven't gone unnoticed. "It is interesting to see how they each have become class leaders," says Dixon Barthel, assistant professor of radiologic sciences. "They dive headlong into life and their studies with an eagerness and excitement that is quite refreshing. Angie and Chris stand out as two of the most excellent examples of selflessness I've witnessed in recent years."

Becky Lam, associate professor of radiologic sciences, agrees. "Chris is extremely bright, and combined with his passion for health care, will make an awesome health care professional," she says. "Angie is involved in a multitude of activities that further demonstrate her sweet, selfless spirit. She does this with the highest regard for life itself, for she understands its preciousness."

Angie is anxious to begin her career after graduating this May, the day after her 29th birthday. Chris will graduate in 2004, earning a degree in radiography. His ultimate goal is medical school.

Their plans also include more children. "When we first lost Becca, I didn't want another child, even though the doctors assured us her condition wasn't genetic," Angie says. She was too overwhelmed by the list of what-ifs: What if she lost yet another child? What if she couldn't love a second child as much as she loved Becca? What if she loved a second child too much? Would that somehow be a betrayal of her beloved firstborn?

But Chris and Angie feel they're now ready to focus on the future, guided by their daughter's spirit. Despite their optimism and resolve, they acknowledge that they still occasionally feel overcome with grief. "There have been times [during clinical training] when I've wanted to run out of the hospital screaming, but I know I can't," Angie says. "That wouldn't be beneficial to me or anyone else. It's important to me that I finish my degree for Becca's sake. I think it's something she would have wanted me to do. She was such a giving child. This is a way of keeping her memory alive."

For more information about the Rebecca Erryn Moon Foundation Golf Tournament, or to make a donation to the foundation, contact the Moons at (706) 651-1352 or send a check payable to the foundation to the Moons at 4132 Fair Oaks Dr., Martinez GA, 30907.

Larger than Life

By Christine Hurley Deriso

Editor's note: *Medical College of Georgia Today* gratefully acknowledges the contributions of Medical Historian in Residence Lois T. Ellison to this article.

Lamartine Hardman, age 19, upon graduation from the Medical College of Georgia.

One of Emma Hardman Thomson's favorite childhood memories is of dressing up in her big sister's high heels, smudging rouge on her cheeks and sauntering around the house in all her tacky glory.

But the high heels were trickier than she anticipated. As she began her grand descent down the stairs, she tripped and tumbled to the bottom. No matter. Her daddy was there to catch her and bundle her in his loving arms. True, he was in the middle of a meeting, and considering that he was the governor of Georgia, the meeting was probably important. But Dr. Lamartine Griffin Hardman always had time for his children.

"Gentlemen," said Dr. Hardman, holding his tousled youngest child, "I'd like to introduce you to my daughter, Emma."

Mrs. Thomson still chuckles at the decades-old memory. "I was always under his elbow, wherever he went," she said.

Indeed, her favorite play spot was the closet adjoining her father's office in the Governor's Mansion, located in Atlanta's Ansley Park. "I taught school there," she explained. "Daddy would be dictating and I would be talking to my imaginary students. That was fine with him."

The legacy of Dr. Lamartine Griffin Hardman, an 1876 graduate of the Medical College of Georgia (then the Medical Department of the University of Georgia) and Georgia governor from 1927-31, is vast and varied. But to Emma Hardman Thomson, he was, first and foremost, just Daddy.

"He was a very dignified man...but so caring and loving," she said.

Caring and loving, yes. But his standards were exceedingly high. "I always felt a lot was expected of me," said Mrs. Thomson. "He thought a person's character was very important. To this day, people comment that I'm always on time. Daddy thought there was no excuse to keep anybody waiting. He used to say, 'Anybody can be clean and on time.'"

When she misbehaved, a simple look sufficed to convey his displeasure. "He had a certain tone of voice. 'Now, sweet,' he would say, meaning, 'That's enough.' And that was all he had to say."

Her father died in 1937 at age 80, but he still looms larger than life to his daughter. "He wasn't perfect—nobody on this earth is—but he was wonderful," said Mrs. Thomson. "And so far ahead of his time."

It wasn't just his accomplishments that astonished people, but his mastery of so many different fields.

Dr. Hardman came by his work ethic—and his dizzying productivity—honestly. He was born in 1856 to Dr. William Benjamin Johnson, a physician and Baptist minister, and Susan Elizabeth Colquitt Hardman, whose family produced four governors in Georgia and Texas.

The couple raised their 11 children in Harmony Grove (now Commerce), a small Georgia town that could scarcely contain the energy and ideas of son Lamartine. As a young man, he opted for a medical career. He was totally committed to health care, but it would become one of many pursuits.

After earning his medical degree,

Emma G. Hardman with children Emma Griffin (clockwise from lower center), Sue Colquitt, Lamartine Jr. and Josephine.

Gov. Lamartine Hardman greets Col. Charles A. Lindbergh at Candler airfield in Atlanta in 1927, shortly after the aviator's historic transatlantic flight.

Dr. Hardman began a practice in Commerce. But his career seemed premature; there was so much more to know, and Dr. Hardman traversed the globe to learn it. He trained at Bellevue Hospital in New York, then pursued postgraduate studies at the University of Pennsylvania, the New York Polyclinic and Guy Hospital in London, from which he received a second degree in 1890.

He returned to Commerce some 18 years later; *now* he was ready to hang his shingle. He and his brother, William B. Hardman, established the Hardman Sanatorium in 1899. "They introduced into the hospital advanced apparatus," said journalist Louie Newton, "and before 1900 Dr. L.G. Hardman was a nationally known physician." The sanatorium served patients throughout northeast Georgia until 1945.

Dr. Hardman supplemented his practice with research; he made early forays in the field of modern anesthesia, injecting an animal model with tincture of Indian hemp.

He also ventured into entrepreneurship. In 1893, he founded the Harmony Grove Cotton Mills. Later, he established the Hardman Roller Mills in Commerce. As he acquired new businesses and grew his medical practice, he also invested in farmlands, becoming one of the largest farmers in Georgia. He applied his shrewd scientific mind to agriculture, experimenting with the best ways to grow crops and raise healthy livestock. He was named a trustee of the Georgia State College of Agriculture in Athens, now the Agriculture College at the University of Georgia.

In his *spare* time, he rose to the challenge of friends and colleagues who suggested that he apply his skills to public service. He represented Jackson County in the Georgia House of Representatives from 1902 to 1906, then served in the Georgia Senate from 1907-08. His political agenda reflected his priorities and principles. For instance, he introduced legislation requiring public schools to offer basic agriculture courses; a measure petitioning the U.S. Congress to authorize a commission to conduct a drainage survey of Georgia; a prohibition bill banning legalized whiskey; and most important, an act establishing the State Board of Health.

He also relinquished his longtime commitment to bachelorhood during this period, marrying Emma Wiley Griffin in 1907.

"My mother was extraordinarily giving," said daughter Emma. "She could charm the birds right off the trees." Dr. Hardman was 25 years her senior, but the couple was utterly compatible. They began a family that ultimately included four children.

Dr. Hardman served as U.S. fuel administrator for Georgia during World War I but was twice stymied in his quest for the governorship. He lost races in 1914 and 1916 but was finally elected in 1926.

At age 70, he was as indefatigable as ever, overseeing state government, business affairs and a large family. Daughter Emma recalled a continuous hum of excitement at the Governor's Mansion. Her father hosted visits from international dignitaries and world-famous celebrities, including inventor Thomas Edison, aviator Charles Lindbergh and Admiral Richard E. Byrd.

"Daddy and Mother gave a very

large to-do in Admiral Byrd's honor," Mrs. Thompson said. "Whenever there was someone of importance there, I came home from school. Daddy thought it was very important that I learn to conduct myself appropriately around people who had done things and been places."

Dr. Hardman enjoyed his role as Georgia's official host, but his top priority as governor was to apply his business acumen to government affairs. In his second inaugural address in 1929, he said, "It is apparent in our state, and indeed in most, if not all the states in the Union, that there is a need and a demand for a more modern, businesslike arrangement of operating the state's affairs." The Great Depression took its toll on his ambitious agenda, but he laid the groundwork for a comprehensive reorganization of state government and a centralized board to oversee higher education (now the University System of Georgia Board of Regents).

Daughter Emma recalls that years after her father's death, her sister, Josephine, attended a function where she met famed heart surgeon Michael E. DeBakey. When Josephine told him she was from Georgia, Dr. DeBakey commented that it was a Georgian who forged a national model for state boards of health. "That was my father," Josephine responded proudly.

Dr. Hardman's descendants have worked hard to honor and perpetuate his legacy. Among their many accomplishments, son Lamartine Jr. served on the advisory board of then MCG President William Moretz. Grandson John Hardman is an MCG School of Medicine graduate and director of the Carter Center, a non-profit public policy center founded by Jimmy and Rosalynn Carter.

His descendants are proud that he set the bar of achievement so high. "Granddaddy was quite a Renaissance man," said granddaughter Shell Hardman Knox. "He was always a larger-than-life figure. He died before I was born, but I would love to have known him. He's probably affected all of us in a lot of ways we don't even realize."

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Asking the Questions

By Christine Hurley Deriso

Dr. Alan Roberts' cancer diagnosis isn't the first subject that comes up in his conversations.

It isn't the second, either, or even the third or fourth.

It's barely an afterthought, really… He'll answer questions if asked, but he finds other subjects more interesting.

For instance:

- Should a physician morally opposed to abortion be required to provide abortion information to a patient?
- Should the medical needs of a 35-year-old productive individual trump those of an 87-year-old Alzheimer's patient?
- Should a murderer receive a heart transplant?
- Do the security benefits of a national DNA databank outweigh privacy concerns?
- Are employers and insurance companies entitled to individuals' genetic information?
- Should prenatal testing weed out damaged, or even less than ideal, embryos?

Dr. Roberts, an associate professor of medicine at the Medical College of Georgia, has spent much of his career pondering questions of medical ethics and incorporating his expertise into the MCG School of Medicine curriculum.

He acknowledges that his prostate cancer, diagnosed in 1999, casts such theoretical issues in a daunting new light. But he can still step back with measured equanimity and retain his objectivity. After all, he reasons, medical ethics is a messy business, simmering with the passion, morals, values, knowledge and experience of every individual who brings an opinion to the table. That's what makes it so intriguing.

Dr. Roberts' ethics curriculum, which has been integrated into the School of Medicine's Essentials of Clinical Medicine program, isn't intended to lead students to conclusions, but to encourage them to think for themselves.

"There are certain basic principles we all believe in, and we need to respect those. For instance, it's a universal principle to try to help and to try not to hurt," Dr. Roberts said. "But in most cases, I don't presume that my view is right. I'm more concerned with how students approach an issue and let them build on that."

Unlike some philosophy courses with only the most nebulous of practical applications, Dr. Roberts knows from his years of experience in treating patients that these issues will be all too relevant to future physicians. "Dr. Roberts is one of the finest clinicians and clinician role models at MCG," said Dr. Ruth-Marie E. Fincher, professor of medicine and vice dean for academic affairs in the MCG School of Medicine. "He provides outstanding patient care as evidenced by the many professional people, including colleagues, who seek him as their physician. He is truly a physician's physician."

Patients are always foremost in Dr. Roberts' mind when he prompts students to grapple with issues that can, and will, have life-and-death implications.

"Every time we discuss an ethical dilemma, I try to prepare students that their values will be put to the test," Dr. Roberts said. "The frustrating part is they want answers. They want everything in black and white, and it's just not that simple."

He wants to prepare them for the challenges they will doubtless face. For instance, will economic pressures ever tempt, or even force, them to lower their standards of care? Will life experience threaten to topple some values they've cherished since childhood? Will their compassion—the very quality that drew them to medicine—succumb to the rigors of an exhausting career?

As they grapple with these issues, Dr. Roberts stresses that he has boundless faith in their ability to rise to each challenge. "Our students are the cream of the crop," he said. "They're much less materialistic than many members of my generation. I have found them to be extremely idealistic, down to earth and honest. I am totally impressed with them."

But even under the best of circumstances, altruism can fall victim to day-to-day pressures, he noted. And never has the medical arena been more stressful than it is today.

"It's absolutely incredible, mind-boggling, what we've been able to accomplish technologically," Dr. Roberts said. "Assisted reproduction, genetic therapy, even genetic manipulation… these are issues we haven't even come close to really understanding. There doesn't seem to be any end in sight to what we're capable of accomplishing, and we somehow have to steady the course."

Tomorrow's generation of physicians, he said, will be on the front line of determining not only what *can* be done, but what *should*—and should not—be done. "We've sort of come full circle. We have the technical ability to manipulate so many aspects of our bodies and our lives. With that, we have to develop a new ethic to come to terms with all these changes."

He emphasizes that a commitment to ethics is a lifelong endeavor. "I'm constantly learning and modifying my beliefs," Dr. Roberts said. "I have very few fixed beliefs that I can't be influenced about. That's the most wonderful part about what I'm doing."

Students and colleagues alike express their admiration of his open-mindedness. "The quality that I admire most is his integrity," said Dr. Karen Steinberg, chief of the Molecular Biology Branch of the Communicable Disease Center and Prevention's National Center for Environmental Health. "His role as a mentor in ethics and in medicine really seems appropriate to me. I have never seen him avoid the truth for his own comfort, and I have never seen him use the truth thoughtlessly. He is one of the

Dr. Alan Roberts

most principled people that I know, and is willing to confront difficult issues."

Dr. Roberts enjoys occasionally assigning his students the task of writing their own Hippocratic oath. Does the famed Greek philosopher stand the test of time? Are centuries-old tenets relevant today? Would Hippocrates have weighed in on, say, the cloning debate?

As perplexing as today's medical landscape can be, Dr. Roberts finds it downright invigorating, a source of ever-growing fascination. The ethical dilemmas of tomorrow, he is sure, will be even more confounding than those of today.

Which leads to that loathsome cancer diagnosis. At age 71, Dr. Roberts is suddenly staring mortality square in the face; denial does not factor into his mindset. The wonders of medicine are holding his disease at bay, but his tumor cells are aggressive and he knows all bets are off. Medicine, after all, has its limits.

"There's no way to prepare oneself for something like this," he said. "It's very humbling, for the doctor to suddenly be turned into the patient. It's totally overwhelming, because you're faced with your own mortality. Suddenly, it's right around the corner."

But fear is only one part of the story. As is true of so many of the ethical issues he grapples with, his disease has unveiled "a whole kaleidoscope of dimensions," he said. "For instance, I'm a better teacher and a better human being [since my cancer diagnosis]. It makes me more sensitive and attuned to the feelings patients have that physicians may not really understand. I can identify with people better."

And his priorities have never been so finely honed. "My relationships keep me happy and keep me going," he said. "It is my love and my passion for my wife, Janet, that allows me to feel whole and bring passion to my work. Without that bond, I don't know how easy it would be or how much I would care. What I will miss most when I die is being without my Janet, but I know some time, somehow, somewhere we will be together again."

But for all his philosophizing, pragmatism ultimately rules the day. He still has classes to teach, appointments to meet, a schedule to follow. And his eyes still sparkle when he muses, "What makes a human being more valuable than an animal of another species? Why is life sacred?"

He knows that if he lived to be a thousand, he wouldn't find all the answers. But for the duration of his stint on earth, he'll keep asking the questions.

GETTING REAL

By Ellen Gladden

The scenarios were lifelike, even though the patients were never really alive.

Junior nursing student Wendy Jackson administered medications, kept charts and monitored the vital signs of a 32-year-old female with a fractured pelvis, right tibia and ankle. Her classmate, January Quick, treated a 69-year-old male with chronic obstructive pulmonary disease who smoked for 40 years.

Through a partnership with the Fort Gordon U.S. Army Signal Center, seven Medical College of Georgia nursing students got a first-hand look last fall at a virtual nursing unit. Using human patient simulators at Fort Gordon's Center for Total Access, students staffed a six-bed nursing unit for four hours.

The simulated patients include an anatomically correct plastic human and a computer system that mimics human biological reactions. Pupils dilate and constrict, respiratory rates and heart rates are measurable and colored fluid excretes from the simulated patient, allowing students to monitor urine output. Just like the simulator back home in the MCG School of Nursing, the Fort Gordon machines allow students a test run with patients before interacting with actual people.

In 1994 MCG became

Nursing student Allison Reinecke listens to "heartbeat" of human patient simulator.

the fifth site in the world to house such advanced medical training equipment, and on Nov. 22, MCG nursing students became the first civilians to use six simulators simultaneously in a virtual hospital setting. The event was a learning experience not only for the students, but for the product's manufacturers and designers as well.

"This is really the first substantiation of a virtual hospital concept we've been designing," said Ron Carovano, director of Medical Education Technologies, Inc. "These systems are electronically linked and Fort Gordon uses them to simulate combat trauma patients in different military scenarios. But today we're able to view a civilian application and take advantage of the students' learning experience. We're not just simulating for an individual's learning, but we're simulating for an operational environment."

Simulators are so realistic that they respond to medications the same way a human body would. A barcode reader near the simulated patient's intravenous line computes the volume and type of "medicine"—water, actually—that the patient received and then triggers the appropriate biochemical response, such as increased heart rate or constricted blood vessels.

"The virtual hospital experience is a controlled environment that allows the student to exercise basic nursing skills and also challenges the students' critical-thinking skills without endangering a patient," said Lori Schumacher, the nursing instructor overseeing the students' simulation.

"This machinery allows us to produce more unusual crises than students may experience in the actual day-to-day hospital setting," said Mr. Caravano, who also engineered the technology that made the simulators possible. "This is the same concept as flight simulators—after training, clinicians will know how to react because they've experienced this situation before."

And judging by the students' reaction, the simulation experience at Fort Gordon was a great opportunity to learn that treating multiple patients is much harder than just one.

"At first I was thinking, 'This is not as stressful because it's not a real person.' A real person can look at me and talk to me and tell me how he is feeling," said Wendy. But after helping her classmates with two patients whose vital signs simultaneously began to crash—while maintaining regular monitoring and medications with her own patient—her feelings were a little different. "This is pretty realistic. It's everything I expect we'll have to do in the hospital."

Just as in real life, not all patients survive. After her patient did not recover, January was admittedly exhausted from the recovery effort. "I was hoping he would come back to life," she said. "It was stressful. Chest compressions and bagging are a lot of work. I worked up a sweat."

The partnership with the U.S. Army will continue to benefit future nurses. This semester, MCG students in Athens and Augusta are getting an estimated 60 hours of experience with the simulators, said Ms. Schumacher.

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Do You Need an Estate Plan?

For the year 2002, the federal government exempts estates with a gross value of $1 million or less from estate taxes. Under the tax act of 2001, the amount exempt from estate taxes rises gradually to $3.5 million in 2009. Finally, this tax act provides for the complete repeal of the estate tax for the year 2010. After 2010, the estate tax exemption amount reverts to the 2001 level.

When determining the size of your estate, remember that your gross estate is comprised of every asset you own. This includes your home, condo, cars, IRA and other retirement plans, etc. It is easy to see how your total estate can add up to create an estate that will be subjected to federal estate taxes that can climb as high as 50 percent. An IRA is subject to income tax in addition to the estate tax.

Whether you like it or not, if you fail to create an estate plan, the federal government will take a large percentage of your assets over the exempt amount and it will decide how best to spend it.

Of course, the tax law is subject to change. Currently, the federal government is debating accelerating the phase-in of tax breaks, making them permanent and the size of these breaks. Subsequent congresses and administrations are sure to have their say on the subject as well. No matter the final outcome of the estate tax debate in this congress or the next, the estate-planning process is still vitally important. Careful planning allows you to determine your goals and how they will be achieved, regardless of federal estate tax exempt amounts. If you fail to make arrangements for the disposition of your estate, a court in your state will decide who will benefit from your life's work.

Planned giving is often a part of a comprehensive estate-planning process. Making charitable provisions in your estate plan can provide a lasting legacy at the Medical College of Georgia while maintaining your commitment to your family's needs and desires. A planned gift can offer many of the following advantages:

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- Make a larger gift than you ever thought possible.

It is important to remain proactive in the estate-planning process, even after you have established a will and made charitable provisions. According to the 2000 National Committee of Planned Giving's Survey of Donors, nearly 75 percent of individuals with charitable provisions have never revised them. Additionally, only 33 percent of individuals who have made a charitable provision in their estate plans have informed the charity. It is always a good time to review your estate plan to make sure it reflects your current wishes. If you have included the Medical College of Georgia in your plans, we encourage you to let us know. By knowing your wishes in advance, we can ensure that they will be carried out to your satisfaction.

Please visit a financial professional specializing in estate planning to make sure that assets you've worked so hard to earn can help you accomplish your life's dreams—today and tomorrow.

To explore more tax-wise options for making gifts to MCG, call me, Certified Financial Planner Troy Breitmann, at 1-800-869-1113 or e-mail tbreitma@mail.mcg.edu. You may also visit www.mcg.edu and click on the Alumni & Friends link.

The information in this article is not intended as legal advice. For legal advice, please consult an attorney. Tax laws are subject to change, which may affect statements in this publication.

Dr. Drisko Named Dental School Dean

Dr. Connie Drisko, professor of periodontics, associate dean for academic planning/faculty development and director of clinical research at the University of Louisville School of Dentistry, has been named dean of the Medical College of Georgia School of Dentistry.

She will begin in May, pending University System of Georgia Board of Regents approval.

"I see a lot of energy and movement toward excellence at MCG, with the goal of becoming one of the top dental schools in the United States," said Dr. Drisko. "That's an exciting agenda and I'm privileged to be part of it."

She plans to perpetuate the school's emphasis on clinical excellence and community service, particularly to medically underserved populations. She also plans a research focus that relates the importance of oral health to overall health. Oral disease, she noted, has links to conditions as diverse as cardiovascular disease and diabetes.

"I'm anxious to forge alliances with organized dentistry and people who are as interested as we are in raising the awareness of the importance of oral health," Dr. Drisko said. "I would like to work with others within the University System of Georgia, health care agencies, community groups and the legislature to address oral health as an essential component of total health."

This interrelation between clinical and research agendas perfectly complements MCG's overall mission, according to MCG President Daniel W. Rahn. "Dr. Drisko has a comprehensive background that lends itself beautifully to serving our tripartite roles of research, service and education," he said. "We are thrilled to have her on board as the leader of the state's only dental school."

Dr. Drisko earned a dental degree from the University of Missouri-Kansas City School of Dentistry and a certificate in periodontics from the Department of Veterans Affairs Medical Center in Leavenworth, Kan.

She is a fellow of the Executive Leadership in Academic Medicine Program for Women and the American College of Dentists. Dr. Drisko is a diplomate and director of the American Board of Periodontology. Her research interests include clinical trials of drugs and devices to treat periodontal disease. She has served as the principal investigator on industry and National Institutes of Health-funded research projects totaling more than $1.7 million.

Homecoming Slated April 24-27

Fun, food and friendships new and old are on tap for Homecoming 2003 at the Medical College of Georgia April 24-27. Activities have been planned for alumni, students and faculty.

Registration is required, with advance registration strongly recommended since space for some events is limited. The advance registration deadline is April 11. To register online, visit www.mcg.edu/Alumni/Homecoming.html. You may also register by calling the Alumni Office at (800) 869-1113 or using the form in the back of the Homecoming brochure that has been mailed to you.

Addresses of Homecoming functions:

MCG Alumni Center, 919 15th Street; **Radisson Riverfront Hotel,** Two Tenth Street; **Old Medical College,** 598 Telfair Street; **Pinnacle Club,** 699 Broad Street; **President Rahn's home,** 920 Milledge Road

Schedule of events:

Thursday, April 24

On-site registration, 9 a.m. to 2 p.m., MCG Alumni Center.

School of Graduate Studies Alumni Association annual meeting, noon, MCG Alumni Center Pine Room.

Friday, April 25

Continuing education program, "Reaching New Heights," sponsored by the Department of Dental Hygiene, 7:30 a.m. to 5 p.m.,

MCG Alumni Center, $65 for alumni and $75 for non-alumni. To register, call the MCG Division of Continuing Education at (800) 221-6437.

25th Annual Marvin Goldstein Lectureship and luncheon, "A Silver Anniversary of Learning: The 25th Anniversary of the Marvin Goldstein Lectureship," $50 per person (includes lunch), 8 a.m. to 4:30 p.m. (registration at 7:30 a.m. and luncheon at noon).

School of Dentistry Alumni Association business meeting, 8 a.m., Radisson Riverfront Hotel Oglethorpe Ballroom.

On-site registration, 9 a.m. to 3 p.m., MCG Alumni Center.

MCG campus tour, 10 a.m., departs from MCG Alumni Center lobby.

Hospitality suite, 11 a.m. to 9 p.m., Radisson Riverfront Hotel Terrace Room.

School of Allied Health Sciences Alumni Association luncheon and presentation of Distinguished Alumnus Award, noon, Old Medical College, $15 per person.

Lecture, "The Present and Future Direction of the Physician Assistant Program," hosted by the Department of Physician Assistant, 1:30 p.m. (immediately after the alumni association luncheon), room 1002A of Pavilion I. A reception will follow. To register, please call the PA Department at (706) 721-3246.

School of Medicine Dean's Reception, 5:30 to 7:30 p.m., Old Medical College Solarium.

School of Nursing Alumni Association dinner and presentation of the Distinguished Alumnus Awards, 6:30 p.m. reception, followed by dinner at 7:15 p.m., Pinnacle Club, $25 per person.

School of Graduate Studies Alumni Association dinner and Distinguished Alumnus Award Presentation, 7:30 p.m., MCG Alumni Center, $18 per person.

Alumni Association of the School of Medicine annual banquet and presentation of Distinguished Alumnus Awards, 7:30 p.m., Old Medical College, $37.50 per person.

Saturday, April 26

MCG Foundation Development Committee meeting, 8:15 a.m., MCG Alumni Center

On-site registration, 9 a.m. to 3 p.m., MCG Alumni Center.

Alumni Association of the School of Medicine board meeting, 9:30 a.m., MCG Alumni Center.

Hospitality suite, 11 a.m. to 6 p.m., Radisson Riverfront Hotel Terrace Room.

Alumni, Faculty, Board Members and Friends Cookout, 11:30 a.m. to 2:30 p.m., MCG Alumni Center Ballroom and pool area.

Nostalgia Hour, 11:45 a.m., MCG Alumni Center Ballroom and pool area.

MCG Foundation board meeting, 1 p.m., Old Medical College.

President's Reception, 3:30 to 5:30 p.m., home of Dr. And Mrs. Daniel W. Rahn.

Medicine and dentistry class reunions, 6 p.m. social gathering, 7 p.m. dinner, $45 per person. Reunion classes: *Medicine*—1938, 1943 March, 1943 December, 1948, 1953, 1958, 1963, 1968, 1973, 1978, 1983, 1988, 1993. *Dentistry*—1973, 1978, 1983 and 1988.

Homecoming dance, 9:45 p.m. until, cash bar, Radisson Riverfront Hotel.

Sunday, April 27

Memorial service for School of Medicine alumni, 10:30 a.m., Old Medical College.

Emeritus Club luncheon and induction of the class of 1963, 11:30 a.m., Old Medical College, $20 per person.

President Rahn Included in List

Medical College of Georgia President Daniel W. Rahn is included in *Georgia Trend* magazine's 2003 list of the 100 most influential Georgians.

Georgia Trend annually publishes its list of most influential Georgians. This year's list is included in the magazine's January 2003 edition.

The magazine notes President Rahn's vision and leadership in areas including faculty recruitment and biomedical research. "Just a year after his appointment," the article says, "Rahn has ambitious plans for the school to become a leading research center. An aggressive building program has already started, with ground broken in July for a 64,000-square-foot interdisciplinary research building and plans completed for a new cancer research building. Rahn has been pushing for a Georgia Cancer Coalition regional center of excellence in Augusta and also plans to

Deadline for submitting information for publication in the summer issue of AlumNews is April 11, 2003.

Alumni! Let us know what's new with you by taking a moment to fill out this form. Also, please send us your curriculum vitae so we can keep your files up-to-date.

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Please send to: *Christine Hurley Deriso; FI-1040; Medical College of Georgia; Augusta, GA 30912; fax to (706) 721-6723 or e-mail to cderiso@mail.mcg.edu.*

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The magazine cites President Rahn's plan to increase research funding to $100 million in five years. "He's also put muscle behind MCG's technology transfer, which investigates ways to commercialize research," the article says.

Dr. Rahn was named MCG's seventh president in June 2001.

Class Notes

School of Medicine

Navy Lt. Craig J. Randall ('99) recently completed Dynamic Response '02 while assigned to the 24th Marine Expeditionary Unit based in Campe Lejeune, N.D. He is one of more than 4,000 Atlantic Fleet sailors and marines deployed abord the ships of the USS Nassau Amphibious Ready Group. His unit is an expeditionary intervention force that can rapidly organize for combat operations in virtually any environment. Visit the 24th MEU Web site at www.24meu.usmc.mil.

Dr. Dean Paschal ('80) recently had a book of short stories published by the Ontario Review Press. The title is "By the Light of the Jukebox," distributed in the United States and Canada by W.W. Norton.

Obituaries

Dr. Erasmus James McCranie ('45) died Sept. 30 at age 87. He joined the MCG faculty in 1956 as a professor of psychiatry and retired as Chairman Emeritus in 1984.

School of Allied Health Sciences

Students Implement Ergonomics Skills

Christine Hurley Deriso

Medical College of Georgia occupational therapy students probably never expected to learn how to assemble a tractor, but after a recent class project, "farm machinery" is practically their middle name.

Ricky Joseph, an instructor in the MCG Department of Occupational Therapy, isn't content just to *tell* his students about ergonomics, the science of optimizing work environments for safety and productivity. He wants them to *live* it, so he matched their burgeoning skills with the needs of Grovetown, Ga.'s John Deere plant.

The students in his ergonomics class spent two days last fall assessing five workstations at the tractor-assembling plant. They watched employees perform various tasks and, drawing on their classroom instruction, noted conditions such as lighting, tool usage, speed of production and overall environment.

"They were looking at ways to increase productivity, safety and overall fit of the work environment to the worker," said Mr. Joseph.

After assessing the workstations, the students compiled recommendations, then returned to the plant Dec. 4 to share their insights.

Many of their recommendations cited techniques or work habits that could lead to cumulative trauma disorders —those caused by continual repetition of tasks. Assembly-line workers are at particularly high risk of these disorders, Mr. Joseph said. But he noted that simple modifications—for instance, adjusting posture or changing tasks periodically—can forestall problems such as back pain, muscle spasms or repetitive-use disorders. The results, he said, benefit both employee and employer.

"John Deere has taken steps to ensure the plant is very worker-friendly," he said. "They're always looking for ways to increase worker safety and productivity." In fact, plant managers were so impressed by another set of Mr. Joseph's ergonomics students that they immediately implemented a recommendation to modify the lighting in one plant.

"The management said they consistently find that our recommendations are sound, cost-effective and easily implemented," Mr. Joseph said.

"I continue to be amazed at the depth of [the students'] observations in the short time frame they spend here each semester," said John Deere Safety Manager Matt Hurley. "[The students did] simply excellent work and [offered] easy low-cost solutions, not to mention improving employee

Ricky Joseph teaches ergonomics to occupational therapy students

safety and work environment."

The students enjoyed the project so much that two of them now plan to specialize in ergonomics. "They just loved it," said Mr. Joseph, who noted that students invariably enjoy witnessing the real-world applications of their skills.

PTs Pinpoint Massage Benefits

Christine Hurley Deriso

Physical therapists at the Medical College of Georgia aren't content to simply know that a massage feels great. They want to know why.

Dr. Mary Ellen Franklin and Donavon Reimche, faculty members in the Department of Physical Therapy, have conducted studies pinpointing the health benefits of massage. "I have always been curious to know why you feel so good after a massage," Dr. Franklin said. "I think something occurs systemically."

Her research is targeted at validating that hunch. For instance, in one study, she measured levels of the stress hormone, cortisol, in urine after people got a massage. She found that the cortisol levels tended to be altered after a massage, with the degree of variation correlating to the intensity of the muscle stimulation.

Dr. Franklin wants to further study hormone levels after a massage; for instance, she suspects that the muscle-loosening process may trigger the release of endorphins, enhancing a sense of well-being.

Donavon Reimche demonstrates massage techniques

A study supervised by Mr. Reimche showed that a hamstring massage increases range of motion of the knee for a full week. "This technique could be used on people who have restrictions in motion due to tight muscles," he said.

On the other hand, physical therapists caution that a massage isn't for everyone. "Massage can shunt fluids centrally and stress the heart, so those with pre-existing medical conditions should consult a physician before getting a massage, just as they would if they were starting an exercise program," Dr. Franklin said.

She also recommends that those with health problems get a massage from someone with extensive training in patient care such as a physical therapist. Physical therapists have a much more extensive medical background than massage therapists, she noted, and can target particular areas of the body for therapy after an illness or injury.

Physicians can refer patients to physical therapists for massage therapy as needed.

The field of physical therapy actually traces its roots to massage, according to Mr. Reimche. "Massage has been part of physical therapy since the inception of the field in the 1920s," he said. "Massage therapy was a big part of polio therapy. We've done this for years."

The technique is included in the curriculum of MCG physical therapy students. The students learn different strokes and techniques to target specific body areas, illnesses and injuries. For instance, patients who have had lymph nodes removed may require a specialized massage technique to relieve fluid accumulation in the limbs.

MCG students also learn the physiological basis behind massage. For instance, "nerves can cause muscles to tighten," said Mr. Reimche. "Or connective tissue may adapt to a contracted position and not allow full range of motion." The correct diagnosis is vital to effective therapy.

Once physical therapists address the problem during massage, they teach patients adaptations in posture and movement to preclude future problems. "Our goal is to get people to the point where they can function independently," Mr. Reimche said. "If you don't change the habits and positions that caused the problem, we're right back to where we started."

Many of those habits and positions, he said, result from sedentary lifestyles and deskwork—the staple of many modern-day jobs. Physical therapists recommend regular exercise and frequent breaks from desk-bound tasks. A few stretches and a simple walk up and down the hall every half hour can make a big difference, Mr. Reimche noted. "The body handles movement fine," he said. "That's what the body is designed to do. Static posture is often the problem."

Indeed, the health care community has come to dramatically rethink the conventional wisdom of bed rest to address problems such as back pain. "One of the highest correlations to back pain is extended bed rest," Mr. Reimche said.

The consensus is clear, he said, that regular movement offers great benefits to the

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vast majority of people—and that the power of touch is a powerful tool in energizing achy muscles.

Students Receive National Scholarships

The American Dental Hygienists' Association Institute for Oral Health has presented national scholarships to two Medical College of Georgia students.

Kimberly Felando, who is earning a master's degree in health education, received the Sigma Phi Alpha Graduate Scholarship.

Amanda Kurelic, a senior in the Department of Dental Hygiene, received the Margaret Swanson Scholarship.

Gwinnett Programs on Tap

Christine Hurley Deriso

The Medical College of Georgia will offer nuclear medicine technology and radiography programs at the Gwinnett University Center in Lawrenceville, Ga., beginning next fall.

The programs offered are a baccalaureate-degree program in nuclear medicine technology and a degree-completion program in radiography for certified radiographers.

The baccalaureate program will include clinical experience in metro-Atlanta hospitals, advanced practice education in Positron Emission Tomography and advanced practice in nuclear cardiology.

The degree-completion program will enable radiographers with associate degrees to earn a bachelor's degree with no or minimal disruption to their careers. Areas of concentration will be in advanced practice areas of computerized tomography and magnetic resonance imaging.

"The formal advanced education will contribute to the quality of disease management and patient care in areas such as oncology and cardiology that have recently seen a leap in the availability of advanced diagnostic and treatment technology," said Mary Anne Owen, program director of nuclear medicine technology at MCG.

Specialists in the area are in great demand, she noted. "There is a huge shortage in qualified radiologic technologists, and as the state's health sciences university, we do everything possible to meet the state's health care needs."

For more information about the programs, call (706) 721-2725.

The Department of Radiologic Sciences held a ceremony Nov. 25 unveiling a portrait of Joshua Harp, an MCG nuclear medicine technology student who died last fall. The department displays the portrait in Joshua's memory and in honor of the enthusiasm he brought to the field.

Dentists Partner in Pain Management

Christine Hurley Deriso

Dr. Joseph Konzelman, a professor of oral diagnosis and patient services in the Medical College of Georgia School of Dentistry, recalls putting his skills to use recently in Saluda, S.C., between bites of barbecue.

Dr. Konzelman was in Saluda performing with the Garden City Chorus. While eating barbecue after the performance, the brother of one of his fellow musicians commented on his neck pain.

"He said he could barely move his neck," Dr. Konzelman recalled. "It turns out he's a crop duster who's had several crashes. As a result, he has lots of neck, back and head pain."

Dr. Konzelman specializes in pain management at MCG, and he happened to have a topical medicine with him. He identified the crop duster's trigger points and massaged the ointment into those areas of his neck. "The guy couldn't believe it. He said, 'I can move now!'" Dr. Konzelman said.

The crop duster made an appointment for follow-up treatment. Dr. Konzelman is happy to help, but he wishes the pilot hadn't had to rely on serendipity to access his services.

To enhance the access and effectiveness of pain-management services, Dr. Konzelman is cultivating close ties with specialists such as neurologists and anesthesiologists in the Augusta area.

"None of us can be all things to all people," he said. "The awareness of what other health professionals can provide is critical, and knowing them as individuals enhances the willingness to refer patients back and forth."

Drs. Nate Brandon, Marc Husid and Joseph Konzelman will co-direct the Augusta Pain Conference in May.

About two years ago, Dr. Konzelman and Dr. Wayne Herman, an associate professor of oral diagnosis and patient services, began attending Grand Rounds at the Walton Rehabilitation Hospital Pain Center and Headache Center.

"About 15 to 20 health professionals attend, representing specialties such as neurology, anesthesiology, physical therapy, pharmacy, psychology, rheumatology and oral medicine," Dr. Konzelman said. The dentists eagerly tapped into the specialists' expertise and began sharing their own. They now visit each other's offices and refer patients when appropriate.

It was clear at the outset

how much each had to offer the other.

"Every time I discuss a patient with Dr. Konzelman, I learn something I may have never considered," said Dr. Marc S. Husid, assistant clinical professor of neurology at MCG and director of Walton's Headache Center. "I'm just delighted by the opportunity to work with him. I've always been open to a multidisciplinary approach to headache treatment, and our goal is to make the full gamut of treatment available to the Augusta community."

The specialists not only respect each other's expertise, they also happen to have great rapport. "Dr. Konzelman is a consummate gentleman and a delight to be around," Dr. Husid said.

They will go a step further in their collaboration this spring. Dr. Husid, Dr. Konzelman and Dr. Nate Brandon, an anesthesiologist at Walton Pain Center, will co-direct the Augusta Pain Conference May 16-17.

The conference, featuring lectures from pain management experts throughout the country, will be held at the Radisson Riverfront Hotel Augusta. MCG's Division of Continuing Education will offer continuing education credit for dentists and physicians who attend.

"The more we consult and collaborate with other specialists, the better it is for the patient," Dr. Konzelman said.

For more information about the Augusta Pain Conference, call Jane Johnson at (706) 826-5814 or e-mail jjohnson@wrh.org.

Dr. Lefebvre Named Journal Editor

Dr. Carol A. Lefebvre, professor of oral rehabilitation at the Medical College of Georgia School of Dentistry, has been named editor of *The Journal of Prosthetic Dentistry.*

The monthly journal, devoted to prosthetic and restorative dentistry, was founded in 1951.

Dr. Carol A. Lefebvre

"When I first joined the faculty in 1989, our founding dean, Dr. Judson C. Hickey, was the editor, so in a sense, the journal has returned home," said Dr. Lefebvre.

Dr. Lefebvre, who is section director of removable prosthodontics at MCG, earned a dental degree and a master's degree in denture prosthodontics from the University of Michigan School of Dentistry. She is a diplomate of the American Board of Prosthodontics and a fellow of the American College of Prosthodontics and the Academy of Prosthodontics.

She also is a member of the International and American Associations of Dental Research and the American Dental Education Association. Dr. Lefebvre received the MCG School of Dentistry's 1996 Teaching Excellence Award and 1998 Outstanding Faculty Member Award. Her department received a 2002 Board of Regents of the University System of Georgia Department Award for Teaching Excellence.

Alumnus Receives Mentoring Award

Dr. Nick J. Minden, a 1982 graduate of the Medical College of Georgia School of Dentistry, has received the 2002 Golden Apple Outstanding Leadership in Mentoring Award.

This was one of two 2002 Golden Apple Awards for individual achievement bestowed by the American Dental Association Committee on the New Dentist. The mentoring award recognizes an ADA member dentist who has demonstrated leadership in this area.

Dr. Nick J. Minden

Dr. Minden, an associate professor of operative dentistry at the University of Florida College of Dentistry, was cited for his dedication to preparing dental students for their careers. For instance, all senior students at the dental college take his 48-hour intensive seminar course on small-business principles and practices for the dentists.

Dr. Minden also consults with students about career decisions, practice opportunities, contract negotiations and the purchase and sale of dental practices. He coordinates rotations in community dental clinics and directs the dental school's associate matching program.

He was nominated for the award by the Florida Dental Association. Dr. Minden believes his background in teaching, and the fact that he's "never forgotten what it's like to be a dental student," helped him become a mentor for students. Before dental school, he held master's degrees in business and education and worked as assistant to the dean of Arts and Sciences at Georgia State University.

"My main activity there was budgetary, but I spent a lot of time speaking with students about career choices and medical school and dental school," said Dr. Minden. "One day, I decided I could do it, too."

Teaching students to become business owners is a challenge he finds rewarding. "As dental educators, we take young men and women who wouldn't be business people and prepare them to own or co-own a dental practice," he

said. "My objective is to minimize the big mistakes—business and career—new graduates might make during their first three years, while they're learning first hand about the practice of dentistry."

Excerpted with permission from the April 1, 2002 edition of the ADA News.

Research Grant Honors Dr. Steflik

Christine Hurley Deriso

The American Academy of Implant Dentistry Research Foundation has created a new research grant in honor of a recently deceased member of the Medical College of Georgia faculty.

The David Steflik Memorial Student Research Grant is a competition open to postgraduate dental students who submit manuscripts based on implant-related research studies. Two grants, up to $2,500 each, are awarded annually. The manuscripts are published in the *Journal of Oral Implantology* and are presented at the annual American Academy of Implant Dentistry Research Foundation Symposium.

The American Academy of Implant Dentistry Research Foundation raises and allocates funds to promote dental implant research.

Dr. Steflik, who joined the MCG faculty in 1979 as a senior research associate in the School of Dentistry, died in 2001. He was a professor of surgery and director of research for the MCG Section of Orthopaedic Surgery at the time of his death. His research in dental implantology is internationally recognized.

Dr. Steflik, who earned master's and doctoral degrees from the University of Georgia, was a charter member of the Scientific Advisory Board of the Implant Dentistry Research Foundation and received the 2000 Isaiah Lew Memorial Research Award.

Dr. Sharawy Named to Foundation Board

Dr. Mohamed Sharawy, director of oral biology/anatomy and professor of oral maxillofacial surgery, cell biology and anatomy at the Medical College of Georgia, has been elected to the board of directors of the American Academy of Implant Dentistry Research Foundation.

The academy, with more than 2,400 members worldwide, supports research and facilitates the exchange of knowledge in the field of implant dentistry.

Dr. Sharawy is a senior associate editor of the academy's *Journal of Oral Implantology.*

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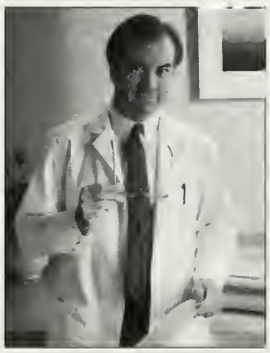

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Grant to Fund Incubator Equipment

An approximately $500,000 grant to the Georgia Medical Center Authority will be used to equip the Medical College of Georgia's biomedical business incubator.

OneGeorgia, a state initiative that uses a portion of tobacco settlement money to create infrastructure in non-metropolitan Georgia, provided the grant. The Georgia Medical Center Authority, a state agency with the primary mission of optimizing Augusta's role as a medical city, opted to use it to fund scientific and business equipment for the incubator. The facility, scheduled to open in spring 2004, is designed to convert biomedical research into marketable business ventures.

"We are very enthused about the MCG incubator and our new Augusta Biobusiness Center (a mini-research park under development that will work closely with the incubator)," said Lenie Roos-Gabridge, executive director of the Georgia Medical Center Authority.

"These funds will ensure that our new facility is one of the best-equipped in the Southeast, and perhaps the nation," said Dr. Michael G. Gabridge, associate vice president who directs MCG's Office of Technology Transfer and Economic Development. "Entrepreneurs are going to find Augusta an ideal place to start up a new life-sciences company."

The incubator, he said, will capitalize on MCG's unprecedented research growth. The university's research funding has increased more than 133 percent over the last five years, including 10 to 25 percent growth in each of the last three years, he noted. Matching entrepreneurs with the scientists, Dr. Gabridge said, will energize both scientific and economic development by fostering prompt utilization and commercialization of scientific discoveries.

The incubator will be housed in the new addition to the Interdisciplinary Research Building. Ground was broken on the addition last fall and is on a fast track for completion.

The incubator will include five large laboratory/office suites, a conference room, an autoclave room, a room for samples that require refrigeration and ample space for entrepreneurs and scientists to interact. Each company will be assigned an advisory board, a pool of biomedical business experts to analyze and advise.

"Having the incubator will help us recruit and retain key faculty members and simultaneously help MCG fulfill its role in the Augusta area's economic development," Dr. Gabridge said.

MCG Vice President for Research Matthew Kluger (from left) discusses incubator plans with Dr. Michael G. Gabridge and Lenie Roos-Gabridge

Core Labs Assist Researchers

Toni Baker

John Nechtman can tell you the a's, c's, g's and t's of your DNA.

"We can read it like a book," says Mr. Nechtman, manager of the Genomics Core Lab, one of 12 core laboratories at the Medical College of Georgia that assist and accelerate scientific studies across campus and beyond.

"It's the sequence of these nucleotides that dictates what the gene is, what it ultimately is responsible for doing," Mr. Nechtman says of the high-tech sequencer that can spell out the order of the basic components of DNA.

"If there is an amount of gene utilization that you want to measure, we can use the gene chip machine to do that," he says, referencing another high-tech machine his lab has to offer. "For example, if you have a cancer and you notice that one gene seems to differ in the amount

of work it's doing compared to its activity in a non-disease state, the gene chip machine will measure that.

"But our lab is also a reference point," Mr. Nechtman says of the facility, which is directed by Dr. Jin-Xiong She, Georgia Research Alliance Eminent Scholar in Genomics, who also directs MCG's Center for Biotechnology and Genomic Medicine. "This morning an ophthalmology resident wanted to measure a specific drug used in vivo, in tissue samples," so the lab used a comparatively simple detection device called an HPLC, or high-pressure liquid chromatography, to give him what he needed.

The lab on the second-floor of the Carl T. Sanders Research and Education Building is the oldest and busiest core facility, its growth a reflection of the expanding scientific activity on campus and a concerted effort to support that growth with quality, cost-effective laboratory support. More than 90 percent of basic scientists on campus and an increasing number of physician-scientists currently use the decade-old genomics core.

All the laboratories—including a cell-production core, cell-imaging lab and transgenic mouse facility--are used each day to support ongoing science.

They are also used to get the kind of preliminary data that help get grant applications funded, says Jyoti Koushik, core lab coordinator. Researchers also reference plans to use the facilities in their grant applications.

"We suspect that the core facilities have helped support increases in extramural funding and we are doing some work to see if that is true," says Dr. Michael G. Gabridge, associate vice president for technology transfer and economic development. "We know they help make our faculty in Augusta competitive with those in larger cities such as Boston and San Francisco because they have all this neat gadgetry."

Fee-for-service core facilities offering such "gadgetry" are borne of a variety of scenarios, such as the need for expensive equipment that no single research lab could afford or use enough to justify the investment. Or, maybe the machinery isn't that expensive, but the work is time-consuming and routinely needed by many.

"Our core labs are directed by faculty members, such as Dr. She, who are actively engaged in pertinent, state-of-the-art research and managed and staffed by experienced laboratory professionals using top-notch instrumentation," says Dr. Matthew J. Kluger, vice president for research. "This approach to development and operation has been critical to the expanding research initiatives of the university and will be even more important in anticipated future growth."

Services offered by the core facilities are listed at www.mcg.edu/Core/Labs/.

Many of the core facilities, such as the busy genomics lab, take in almost as much as they spend. "Annual revenues from the use of the labs are close to $2 million," Dr. Gabridge says, noting the money is put back into the facilities.

John Nechtman

Forum Honors Dr. Mahesh

Dr. Virendra B. Mahesh, Regents professor and chairman emeritus of the Medical College of Georgia Department of Physiology and Endocrinology, was honored by The Friendship Forum of India during its recent Economic Growth and National Unity conference.

Dr. Mahesh is the only recipient of the forum's Jewel of India Award and Gold Medal and one of several recipients of the forum's Bharat (India) Excellence Award and Gold Medal.

The Friendship Forum of India is a national organization uniting individuals of Indian origin excelling in science, technology, education and fine arts in India and abroad to promote interaction, collaboration, national unity and economic growth.

Dr. Mahesh is editor-in-chief of *Biology of Reproduction* and a member of the editorial board of *Endocrinology, Journal of Steroid Biochemistry and Molecular Biology, Steroids, Assisted Reproductive Technology/Andrology* and *Research Trends.*

Dr. Mahesh has also been honored by the Society for the Study of Reproduction and the American Physiological Society.

Med Student Strives for Personal Best

Ellen Gladden

There's a lot behind Dawnyetta Marable's petite figure and glowing smile.

Somewhere in between attending medical school, holding office in several campus and national associations, working on campus as a resident assistant, singing with the Augusta Choral Society and with her church choir, and balancing personal and family relationships, the young lady finds time for herself.

"One of my weaknesses is not being able to say no; however, I really prefer to be this busy," she said. "My busy life began when I started taking piano and ballet at age 3. That's just my life. Being involved is something I was raised with, but it wasn't my parents pushing me. This is what I wanted to do."

As if she wasn't busy enough, the second-year medical student recently committed several months of preparation to the Miss Georgia USA Pageant. Amid lessons for piano, saxophone and clarinet and numerous civic commitments, Dawnyetta earned pageant crowns while completing her undergraduate degree at Fort Valley State University and a diploma at Brooks County High School in Quitman, Ga.

The Miss Georgia USA Pageant, Dawnyetta said, was a natural extension of her interest in medicine.

Dawnyetta Marable

"[Pageant winners] represent their state and country on such a large scale by offering community services and serving as positive role models for youth. The focus of the USA system is breast and ovarian cancer research. Pageants are not just about wearing makeup and a crown; there is so much more."

The Miss Georgia USA pageant, held Nov. 2 in Rome, Ga., required months of preparation. "From writing out workout plans and pageant questions to loaning makeup books, my MCG family has been a strong support. Friends from my class, and other classes even, came to the pageant and cheered. It was wonderful," she said.

Dawnyetta said her family support was, literally, tremendous. With her brother, sister, aunts and uncles (her mother has nine siblings and her father seven), a huge cheering section was on hand for the pageant.

And although she didn't score tops among the 36 18-to 27-year-old women, Dawnyetta called the event a success on many fronts. "We spent all day Thursday (before the pageant) rehearsing. Then that night, a motivational speaker talked to us about not being so competitive and reminded us that the competition was really about being our personal best. I know that I performed at my personal best and that makes me proud."

Alumnus Traces Cocaine-Induced Brain Changes

Research by a Medical College of Georgia alumnus strongly suggest that cocaine bites the hand that feeds it by harming or even killing the very brain cells that make possible the "high" that cocaine users feel.

This cocaine-induced damage to key cells in the human brain's dopamine "pleasure center" may help explain many aspects of cocaine addiction, and perhaps spur new anti-addiction drugs. It could also help scientists understand other disorders that might involve the same brain cells, including depression.

The results are the latest from a research project involving postmortem brain tissue samples from cocaine abusers and comparison subjects, performed at the University of Michigan Health System and the Ann Arbor Veterans Affairs Medical Center. The paper appeared in the January issue of the *American Journal of Psychiatry.*

"This is the clearest evidence to date that the specific neurons that cocaine interact with don't like it and are disturbed by the drug's effects," said Dr. Karley Little, a psychiatrist at the University of Michigan Medical School, chief of the Affective Neurophamacology Lab at the Ann Arbor VA and a 1980 graduate of the MCG School of Medicine. "The questions we now face are, are the cells dormant or damaged, is the effect reversible or permanent and is it preventable?"

The data support the idea that chronic cocaine abuse leads to a phenomenon demonstrable in animals called allostasis of reward. Extended cocaine use spurs a process that resets the response to the drug, leading eventually from a pursuit of drug-taking for pleasure to an avoidance of negative feelings associated with its absence. Dr. Little's research suggests that this occurs in human cocaine users and is quite pronounced neurochemically. These experiments illuminate the molecular mechanisms involved as dopamine neurons try to adapt to the cocaine-drenched environment.

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Dr. Karley Little

Dr. Little and his colleagues reported results from 35 known cocaine abusers and 35 non-drug users of about the same age, sex, race and causes of death. Using brain samples normally removed during autopsy, the researchers measured several indicators of the health of the subjects' dopamine neurons--brain cells that release a pleasure-signaling chemical called dopamine. The cells are directly affected by cocaine.

The team looked at levels of a protein called VMAT2, as well as VMAT2's binding to a selective radiotracer molecule, and the overall level of dopamine. In all three measures, cocaine users' levels were significantly lower than those of control subjects. Levels tended to be lowest in cocaine users with depression.

Laboratory rats will happily self-administer cocaine again and again until they overdose themselves to death. That complicates studying long-term effects of cocaine on brain structures in rats; the animals do themselves in before the drug causes the kind of changes that Dr. Little has discovered in brains of long-term human addicts.

Even with this complication notwithstanding, "my crusade is to shift the focus of the neurosciences community to human pathology rather than putting so much emphasis on animal models," Dr. Little said. He has collected over 250 samples of brain tissue from deceased cocaine addicts, alcoholics and suicide victims to advance his work.

His work has helped illuminate much information about the workings of healthy and diseased brains. For instance, dopamine, Dr. Little explained, triggers the actions required to repeat previous pleasures. It's involved not only in the "high" felt by drug users; dopamine helps drive us to eat, work, feel emotions and reproduce.

Normally, when something pleasurable happens, dopamine neurons pump the chemical into the gap between themselves and related brain cells. It finds its way to receptors on neighboring cells, triggering signals that help set off the pathways to different feelings and sensations.

Then, the dopamine is normally removed back to its home cell, entering through a gateway in the membrane called a transporter. While our brain waits for another pleasurable stimulus—a good meal, a smile from a friend, a kiss—dopamine lies waiting inside the neuron, sequestered away in tiny packets called vesicles. VMAT2 acts as a pump to pull the returning dopamine into the vesicles.

When it comes time for another dopamine release, the vesicles merge with the cell membrane, dumping their contents into the gap, or synapse, and the pleasure signal process begins again.

The dopamine neurons of the basal ganglia are critical for warming up, or activating, circuits relevant for the awareness of pleasurable sensations and related memories.

The pleasure center's dopamine neurons die off at a steady rate over one's lifespan. Severe damage is associated with Parkinson's disease, with its characteristic loss of movement control. "As the words suggest, there is an intimate connection between motion and emotion," said Dr. Little. "Emotion puts you in motion. It's not surprising the basal ganglia, of which these dopamine neurons are part, is very active in emotional states. You can think of emotions as pre-activity preparations."

When first taken, cocaine disrupts the brain's dopamine system: It blocks the transporters that return dopamine to its home cell once its job is done. With nowhere to go, dopamine builds up in the synapse and keeps binding with other cells' receptors, sending pleasure signals over and over again to create an intense high.

Since the dopamine system helps us recognize pleasurable experiences and seek to repeat them, cocaine's long-term dopamine-related effects likely contribute to the craving that addicted users experience, and to decreased motivation, stunted emotion and uncomfortable withdrawal.

Dr. Little's studies of post-mortem brain tissue have focused on the striatum, an area of the brain with the highest concentration of dopamine synapses. Interviews with friends and relatives helped his team determine the subjects' alcohol use, mental illness and other characteristics.

The team has already shown that the cocaine users have higher numbers of dopamine transporters, suggesting that the cells had tried to make more return gateways to compensate for the blocked ones. Dr. Little's laboratory recently showed in cell cultures that cocaine causes more dopamine transporters to travel from the interior of the cell to the membrane, increasing the overall level of

dopamine uptake.

The current paper gives the most conclusive evidence yet that dopamine neurons are harmed by cocaine use, because it uses three molecular measures that provide a trustworthy assessment of dopamine neuron health.

VMAT2 protein levels, measured through the use of specific antibodies that bind to the protein in a process called immunoreactivity, are not believed to be as affected by other factors as dopamine transporters are. VMAT2 binding availability, measured through a unique radioactive tracer developed by University of Michigan nuclear medicine specialists, is another assessment of VMAT2 presence and activity. And overall dopamine levels, measured through liquid chromatography, show how much of the chemical was available at the time of death.

On the whole, all three were significantly lower in cocaine users than in the non-drug users. A history of alcohol abuse in cocaine users or controls did not affect the difference significantly.

Levels of VMAT2 protein were lowest in the seven cocaine users in the study who had mood disorders that appeared to be caused by their cocaine use. Researchers have found that depressed cocaine users have more severe addiction and mental health problems than non-depressed users. Dr. Little hypothesizes that decreased dopamine vesicles and increased transporters may contribute to cocaine-induced and other forms of depression. This may explain why depressed cocaine users are less likely to respond to current serotonergic treatments for depression.

"We could be seeing the result of the brain's attempt to regulate the dopamine system in response to cocaine use, to try to reduce the amount of dopamine that's released by reducing the ability to collect it in vesicles," Dr. Little said. "But we could also be seeing real damage or death to dopamine neurons. Either way, this highlights the fragility of these neurons and shows the vicious cycle that cocaine use can create." The findings, he said, should steer treatment toward breaking that cycle.

He also emphasized that the vulnerable nature of dopamine neurons is important in understanding the moods and actions of normal adults as they age and lose dopamine neurons naturally. Considerable evidence suggests that uncontained dopamine may be mildly toxic over time.

Dr. Little and his colleagues hope next to look for differences in the number of dopamine neurons in the subjects' brain samples, and to study the gene activity in the cells of cocaine users and control subjects. They also hope their results will help other researchers study living cocaine users and look for signs of decreased VMAT2 levels.

Dr. Little noted that his MCG education set the tone for his neuroscientific approach to mental illness. "One of my teachers, Dr. Marshall Allen (then chief of neurosurgery) was an enlightened surgeon with a strong commitment to fundamental brain research," he said. "Because of Dr. Allen's influence, I became a very brain-oriented psychiatrist. I've participated in more autopsies than maybe any other psychiatrist in the country. I'm very grateful for the training I received at MCG."

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Dr. Neal Receives Medallion

Dr. Ruth E. Reid Neal, assistant professor of radiology at the Medical College of Georgia, has received the Georgia State Medical Association's highest honor, a Distinguished Service Medallion.

The fall 2002 edition of *GSMA Magazine* cited Dr. Neal's "wise, fearless and strong-hearted leadership" in announcing the honor. "Her service on behalf of this organization has always been carried out with the utmost efficiency and dependability."

Dr. Neal, the first female physician to serve as president and board chairman of the association, is also the first female physician to receive the medallion.

She earned her medical degree from Howard University, where she also completed a rotating internship and radiology residency. She did further postgraduate study at the Naval Health Science Education and Training Command in Bethesda, Md.

Dr. Neal is a member of the National Medical Association, the American Medical Association, the American College of Radiology and the Radiological Society of North America.

She also is a member of the Morehouse School of Medicine Medical Advisory Group and the Morris Brown College Board of Trustees. She is a past president of the Stoney Medical, Dental and Pharmaceutical Society in Augusta.

She has received five American Medical Association Physician Recognition Awards, five Stoney Medical Society Distinguished Service Awards and two Georgia State Medical Association Presidential Commendations.

Dr. Prisant Named to Board

Dr. L. Michael Prisant, cardiologist and hypertension expert who directs the Hypertension and Clinical Pharmacology Unit at the Medical College of Georgia, has been named to the editorial board of the *Journal of Clinical Pharmacology.*

Dr. Prisant already has served as a reviewer for the journal as well as 14 others including *Hypertension, Circulation, Journal of the American College of Cardiology* and *Drug Safety.*

He also is on the editorial board of *Blood Pressure Monitoring, Heart Disease: A Journal of Cardiovascular Medicine, Journal of Clinical Hypertension* and the *American Journal of Therapeutics.*

Dr. Prisant is a regent of the American College of Clinical Pharmacology and a fellow of the American College of Pharmacology who has served as president of the local chapter, the Ahlquist Society.

He is a 1977 graduate of the MCG School of Medicine and has been a faculty member for 20 years.

Dr. Nugent Named Interim Dean

Dr. Katherine Nugent, vice dean of the Medical College of Georgia School of Nursing, has been named interim dean of the school.

Dr. Nugent joined MCG in 1992 as associate dean of undergraduate programs, having previously served as an associate professor and assistant department head in the Clemson University College of Nursing. She holds a bachelor of science and a master of science degree in nursing from Texas Woman's University and received her doctorate in health education and higher education and administration from Texas A&M University.

Nursing School Aids Child-Rearing Grandparents

Ellen Gladden

The Medical College of Georgia School of Nursing is reaching out to area grandparents who face the often-daunting task of raising their children's children.

Older adults in Richmond and Columbia counties are raising grandchildren "for a variety of reasons," said Mike Patton, project coordinator for Project Healthy Grandparents. "Often it is because of drug abuse, death or incarceration of parents. There may be a financial situation where the grandparent takes care of child while parent works. We see cases where abuse or neglect by parents led to a custody with grandparents."

MCG nursing students and faculty work with 20 local families each year to provide health care referrals, stress-management and time-management tips, home health visits and a support group. After one year in the program, families 'graduate' but are invited to annual picnics and social events where they may form networks of support.

"We have over 60 families supported by program," said Mr. Patton. "That means I'll make close to 45 family contacts per month. There are over 150 kids provided services through this program annually."

Mr. Patton noted special-needs children are frequently referred to the program by the Children's Medical Center. "Often we see children who will need total care around the clock for the rest of their lives. Managing medications, appointments and all of the things that go along with a special-needs child can get overwhelming," he said.

Nurses make in-home visits to help adults administer medications or to explain any medical equipment necessary for the child. "I think the nurse visits for those kids have made the grandparents a lot more comfortable about being able to take care of the children. The nurses do a great job explaining conditions or medicine in laymen's terms," he said, noting home visits also help grandparents with their own health needs.

"We see a lot of hypertension, diabetes and obesity, but the biggest problem is access to health care for these grandparents. A lot of them are not eligible or not quite old enough to get on Medicare. Access to medications is a big problem, but through our affiliation with MCG Health, Inc., we've been pretty successful in getting them into the family medicine clinic."

Project Healthy Grandparents also promotes safety in the homes of grandparents. At monthly support groups at Henry H. Brigham Park Senior Center on Golden Camp Road, seniors have received smoke alarms, carbon monoxide alarms and bike helmets for children.

Doctoral Student Receives Award

Ellen Gladden

Donna Shambley-Ebron, a nursing doctoral student at the Medical College of Georgia, has received the Gloria Smith, RN Award for work on her dissertation, "Self-Care and Cultural Meanings of Mothering: An Ethnographic Study of HIV-Positive African-American Women." The American Nursing Foundation awards small grants up to $5,000 to encourage nurses to contribute to the advancement of nursing though research.

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